Research Journal of Biological Sciences 2 (4): 434-437, 2007

Psychological and Psychosexual Effects of Tubal Sterilization

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Abstract: This study was designed to investigate depression, anxiety, postoperation regret and sexual changes in sterilized women referring to health centers of Tabriz, Iran. Data were available from 150 women who sterilized during 1-10 years ago and 150 non-sterilized women as control group. Anxiety rate in the case group was significantly more than the control group ($p = 0.03$). Poststerilization regret rate was 6% which had relation with women's conflict with their husbands concerning decision making before sterilization. Over 75% of 150 sterilized women reported no consistent change in either sexual aspect. Among women with consistent change, negative effects were reported 2 and 5 times more often than positive effects. Insufficient poststerilization rest was a significant risk factor for depression and anxiety. Although most women expressed no regret after sterilization, when there was substantial conflict between a woman and her husband before sterilization, the probability of expressing regret was increased. Tubal sterilization is unlikely to result in changed sexual aspects. Among those with change, the majority experienced negative sexual effects.

Key words: Tubal sterilization, regret, psychosexual disorder, anxiety and depression, sexual aspects

INTRODUCTION

Sterilization is an effective and convenient means of contraception and has become increasingly popular as a birth control technique in the world during the past four decades. In 2000, more than 270 million couples of childbearing age in developing countries relied on sterilization to prevent pregnancy (Lin *et al*., 1996). Iran is a developing country and has one of the fastest population growth rates of the world (Tafazzoli, 2000). According to census result on 1986, Iran growth rate was 3.5% that this number decreased to 1.5% in 1999. Sterilization has been used as a current contraceptive method in Iran since 1990. On the base of 2000 nationwide statistics, sterilization rate was reported around 17.1% and this reached to 21.55% in 2001 (Ministry of Health and Medical Education, 2002).

Although sterilization has been used as a contraceptive measure for several decades, little concern had been expressed about the possible long-range health effects of the procedure until the early 1970s. A number of investigators sought to evaluate the putative association between sterilization and some health problems (Lin *et al*., 1996). These studies, however, found paradoxical results about psychological and psychosexual morbidity (Lin *et al*., 1996; Tafazzoli, 2000; Rosenfeld *et al*., 1998; Aram *et al*., 2002; Abbasi and Kanani, 2001; Shahooy, 1993).

The psychological reactions to sterilization depend on cultural background, stability of marriage, the relative importance of childbearing, attitudes toward medical care and surgical procedures, fear of body mutilation and preoperative personality (Rosenfeld *et al*., 1998).

MATERIALS AND METHODS

The study design is descriptive–analytical. Participants of the study included 300 women age ranged 25-45 years, in which 150 women who sterilized during 1-10 years ago and 150 non-sterilized women who used condom, withdrawal or safe period methods for contraception as control group were selected through cluster random sampling method. Fifteen health centers were selected as cluster from 96 health centers in Tabriz where is one of the five biggest cities of a country that has 70 million population, Then 10 women for each group selected randomly by using health documents, They were eligible for inclusion in this analysis if they

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Table 1: Characteristics of study population (N=300)

Characteristics	Case	Control	P
Age (y)			T-test
<30	51 (34)	60 (40)	t = -0.75
≥30	99 (66)	90 (60)	p = 0.451
N of children			Mann Whitney U
0-2	26 (17.3)	28 (18.7)	Z = 1.32
≥3	124 (82.7)	122 (81.3)	p = 0.18
Education (y)			
Illiterate	31 (20.7)	37 (24.7)	$\lambda^2 = 5.008$
<5	35 (23.3)	42 (28)	df = 4
5-12	76 (50.7)	60 (40)	p = 0.28
>12	8 (5.3)	11 (7.3)	
Occupation			$\lambda^2 = 0.14$
Householder	135 (90)	133 (88.7)	df = 1
Employed	15 (10)	17 (11.4)	p = 0.7
Income status			$\lambda^2 = 2.417$
Sufficient	101 (67.3)	88 (58.7)	df = 1
Insufficient	49 (32.7)	62 (41.3)	p = 0.12

were 25-45 years of age at the time of sampling; no history of psychological and psychosexual disorders and not recently sorrowful event. There were no differences between the two groups in the number of children, income, or demographic characteristics (Table 1).

The women contacted by telephone at the last known address and were asked to respond to the questionnaires.

Data collection: Data collection was done by using standardized zung's self-rating depression and anxiety scale as well as questions about demographic characteristics from all women, also questions about postoperation regret and psychosexual function only from sterilized women. All study participants gave written informed consent.

Content validity of the questionnaire except the depression and anxiety questions, was done by 11 academic members of Tabriz University of medical science.

All the data were entered for processing. Data were collected from the subjects anonymously and analyzed by $spss_{11.5}$ statistics soft ware. T-test, chi-square test and descriptive statistics were used.

RESULTS

The age at sterilization was 31.47±3.67 years (mean± Standard Deviation [SD], ranged 25-24) with 43.3% before the age of 30 and 56.7% aged 30 or older. The least number of living children was 2 in sterilized group. All women (100%) were married at the time of sterilization. All social classes and education levels were represented (Table 1).

Table 2 shows characteristics of the sterilized women. The procedure was suggested by a family planning staff in 29.3% of acceptors. The wives and husbands were the main decision-makers for undergoing the sterilization

Table 2: Distribution of sterilized women by expressing regret

Characteristics	N (%)	Regret (%)	Fisher test
Age at time of sterilization			p = 0.73
<30	65 (43.3)	4.6	
≥30	85 (56.7)	7.1	
Years elapsed since sterilization			p = 1
<5	68 (45.3)	5.9	
≥5	82 (54.7)	6.1	
Time of sterilization			p = 0.46
Interval	41 (27.3)	7.3	
After vaginal delivery	31 (20.7)	6.4	
After cesarean	71 (47.3)	5.6	
After abortion	4 (2.7)	0	
After GYN surgery	3 (2)	0	

Table 3: Distribution of study population by depression levels

Depression	Case N (%)	Control N (%)	P
None depressive	125 (83.3)	120 (80)	
Mild	10 (6.7)	7 (4.7)	
Moderate	11 (7.3)	18 (12)	
Sever	4 (2.7)	5 (3.3)	t = 0.04
Mean± SD	44.31±11.91	44.25±12.39	p = 0.96

Table 4: Distribution of study population by anxiety levels

Anxiety	Case N (%)	Control N (%)	P
None anxiety	133 (75.3)	122 (81.3)	
Mild and moderate	28 (18.7)	20 (13.3)	
Sever	9 (6)	8 (5.3)	
Very sever	0	0	t = 2.11
Mean± SD	43.7±9.01	41.47±9.18	p = 0.03

Table 5: Distribution of sexual changes after sterilization

Sexual aspects	No change N (%)	Increased N (%)	Decreased N (%)
Coital frequency /week	118 (78.7)	6 (4)	26 (17.3)
Sexual desire	113 (75.3)	7 (4.7)	30 (20)
Sexual pleasure	118 (78.7)	9 (6)	23 (15.3)
Ability to have an orgasm	125 (83.3)	4 (2.7)	21 (14)
Attractive for partner	126 (84)	12 (8)	12 (8)

operation (74.7%). Important reasons for sterilization reported: Completed childbearing (60%), financial problems (18%), could or would not use another method (18%), partner's influence (2.7%), health problems (1.3%). The comparison of means for depression in two groups didn't show significantly difference (p = 0.96) (Table 3), but the mean of anxiety in the sterilized group was significantly higher than that in the non-sterilized group was significantly higher than that in the non-sterilized group (p = 0.03) (Table 4).

The results also revealed that not having a good rest after the sterilization operation tended to result in depression and anxiety easily in this study population (p = 0.008, p = 0.02), respectively.

Of 150 sterilized women, 6% expressed dissatisfaction or regret with their choice of sterilization. Requesting information about reversal after tubal sterilization was 2.7%. None of the women obtained sterilization reversal. Among the 9 women who expressed regret, the reasons given included: Menstrual problems (n = 6), loss of libido (n = 2), medical problem attributed to tubal sterilization

(n = 1). In this study, poststerilization regret had significantly relation with substantial conflict between women and their husbands before sterilization ($p<0.001$).

Over 75% of 150 sterilized women reported no consistent change in either sexual aspect (Table 5). The decreased ratings for various aspects of sex life ranged from 8 to 20%, while the increased ratings ranged from 2.7 to 8%. Among women with consistent change, negative effects were reported 2 and 5 times more often than positive effects (95% CI).

DISCUSSION

Sterilization is becoming increasingly popular. Tow findings emerge from this study in regard to the psychological disorders of sterilization in Tabriz, Iran.

First, the data in this study show that anxiety symptoms emerge more frequently in sterilized women than in non-sterilized group. Second, depression and anxiety were related to whether the women had a good rest after the sterilization operation, suggesting that women undergoing sterilization should have a good rest after their operations, so that the extent of psychological disorders may be reduced.

In this study, about 6% of women reported feeling regret after sterilization. This was similar to the rates reported previously (Lin *et al*., 1996; Jemieson *et al*., 2002; Hillis *et al*., 1999; Hollander, 1999; Hemminki *et al*., 1997).

For this study, poststerilization regret rate didn't increase for women who were 30 years old or younger when sterilized (4.6 vs. 7.1%).

The result of Tang and Chung (1997) was similar to our findings. Unlike studies in other countries (Rosenfeld *et al*., 1998; Hillis *et al*., 1999; Hardy *et al*., 1996; Schmidt *et al*., 2000), age, parity, duration of marriage, the timing of sterilization were unrelated to women's regret in our study.

The earlier the sterilization is carried out, the longer the remaining period of fertile life and the greater the chances of changes in marital status or of loss of a child, all of which may lead to a change in the desire family size and express regret (Schmidt *et al*., 2000). In this study, probably, one of the reasons that women's regret didn't indicate significantly relation with young age when sterilized was infrequent divorce or remarriage in study population. In addition, this study included a relatively small sample size of 150 sterilized women with only a small percentage of subjects expressed regret (n = 9), However, other published studies of regret among women included same numbers of participants (Abbasi and Kanani, 2001; Shahooy, 1993; Tang and Chung, 1997).

Women who had a tubal sterilization less than 5 years ago were noted to be remarkably more likely to say they wanted another child than those whom had the surgery more than 5 years ago (Rosenfeld *et al*., 1998). In our study none of the sterilized women tended to change in family size.

In this study, when there was substantial conflict between a woman and her husband before tubal sterilization, the regret rate was increased. Similarly, Jamieson *et al*. (2002) reported that women who had substantial conflict with their husbands or partners before sterilization were more than three times as likely to regret their decision and more than five times more likely to request a reversal than women who didn't report such conflict.

Consistent with previous studies (Rosenfeld *et al*., 1998; Costello *et al*., 2002) the majority of women reported no changed in sexual function after sterilization. Furthermore, the proportion without change was similar to and lay within the range of proportions found in other studies (Rosenfeld *et al*., 1998; Costello *et al*., 2002). Among women with consistent change, decreased in sexual function occurred over 2 times more frequently than increased, not confirming previous findings that substantially more women report positive than negative sexual effects (Rosenfeld *et al*., 1998; Costello *et al*., 2002).

Cultural background, fear of evaluation by others, family cohesion and adaptability as well as preoperative psychological functioning are correlated with women's psychosexual adjustment following sterilization (Tang and Chung, 1997). In this study, presterilization counseling reported by 29.3% of subjects.

With respect to personality and adaptability differences in contact with changes, presterilization counseling and poststerilization follow up system have an important role in women's psychological health promotion (Scott *et al*., 2003; Cunningham *et al*., 2005). Psychological counseling and education should be routinely offered to both sterilized people and potential acceptors, to let people learn more about sterilization so that misunderstandings on sterilization will be gradually corrected (Lin *et al*., 1996).

Presterilization counseling needs to cover alternative contraceptive methods, risk, irreversibility and failure of the procedure. It should elicit information about the couple's psychological and marital dynamics and also the women's Sexual history and psychological or somatic symptoms (Rosenfeld *et al*., 1998). There is no doubt that sterilization providers should be concerned about the long-term effects of anxiety and depression following

sterilization operations as more and more people will seek sterilization for a contraceptive method in the future (Lin *et al*., 1996). The study findings underscore that close attention should be paid to long-term psychological disorders (anxiety) of women undergoing sterilization as anxiety in the sterilized population are more serious than in the non-sterilized population. Potential limitations may have influenced our findings. Because regret is an attitudinal measure for which there is no standardized definition (Chi and Jones, 1994).

CONCLUSION

The use of self report to assess the occurrence of regret in our study as in previous studies, may have led to some misclassifications. The use of self report to assess a changed sexual function is subject to underreporting bias arising from the sensitivity of the subject matter. Future studies should attempt to recruit large samples from different cities of Iran. It is recommended that preoperative psychological and sexual functioning should be included.

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